



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,652	07/07/2005	Reinhard Meier	DE03 0011 US	3864
65913 7590 09/20/2007 NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER VANCHY JR, MICHAEL J	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 09/20/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	Application No. 10/541,652	Applicant(s) MEIER, REINHARD	
	Examiner Michael Vanchy Jr.	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-10 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 6, 7 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/07/2005</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claim 8 is objected to because of the following informalities: The claim states using smoothing "filers," where it should state "filters". Appropriate correction is required.

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Publication No. 2006/0072794 A1. Although the conflicting claims are not identical, they are not patentably distinct from each other because differences in scope do not rise to the level of patentable distinction.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 9, 10, 12, 13, and 15 rejected under 35 U.S.C. 102(e) as being anticipated by Reisman et al., 7,142,699 B2.

**Re claim 1**, a method of binarizing images containing linear structures, and particularly images of prints from the skin (Reisman et al., col. 6, lines, 25-26 and 31-33), characterized in that areas are determined that are each distinguished by a preset approximate direction of the structures and in that the areas of the image that are determined are each filtered with a Gabor filter adapted to the given direction (Reisman et al., col. 6, lines 40-52).

**Re claim 2**, a method as claimed in claim 1, characterized in that the determination of the areas takes place, tile by tile of the tiles into which the image is divided, with further Gabor filters of corresponding directions (Reisman et al., col. 7, line 64 to col. 8, line 10).

**Re claim 3**, a method as claimed in claim 2, characterized in that four further Gabor filters are used (Reisman et al., col. 6, lines 39-40).

Although Reisman et al. uses eight Gabor filters one of ordinary skill in the art can recognize that the method stated in Reisman et al. can be done with four by eliminating four of the filters.

**Re claim 4**, a method as claimed in claim 3, characterized in that the directions of the further Gabor filters are determined by angles of 22.5.degree., 67.5.degree., 112.5.degree. and 157.5.degree. to an edge of the image (Reisman et al., col. 7, lines 1-3 and lines 16-18).

Although Reisman et al. uses eight Gabor filters one of ordinary skill in the art can recognize that the method stated in Reisman et al. can be done with four by eliminating four of the filters. The four filters that would be eliminated in this case would be 0, 45, 90, and 135 degrees.

**Re claim 5**, a method as claimed in claim 2, characterized in that, for the determination of the areas from the filter responses tile by tile of the tiles into which the image is divided, a variance is derived in each case from the given filter response and in that tiles having a variance that is greater than a preset threshold value are assigned to the given area (Reisman et al., col. 7, line 64 to col. 8, line 10).

**Re claim 9**, a method as claimed in claim 1, characterized in that the surface area of the areas so far determined is established and in that areas whose surface area is of less than a preset size are suppressed (Reisman et al., col. 6, lines, 9-39).

**Re claim 10**, a method as claimed in claim 9, characterized in that the surface area is established by tracing the outlines of the areas by means of an edge-tracing algorithm (Reisman et al., col. 6, lines 37-38).

**Re claim 12**, a method as claimed in claim 1, characterized in that the image is binarized prior to the filtering with Gabor filters adapted to direction (Reisman et al., col. 6, lines, 25-26 and 31-33).

**Re claim 13**, a method as claimed in claim 12, characterized in that, to allow the image to be binarized, a threshold value is derived from a histogram of the image covering those pixels in which there is clear information on direction (Reisman et al. col. 6, lines 9-24), and in that the threshold value is selected in such a way that half of the pixels are lighter than the threshold value and half are darker (Reisman et al., col. 6, lines, 31 -33).

**Re claim 15**, system (Reisman et al., col. 1, lines 16-18) for binarizing images containing linear structures, and particularly images of prints from the skin, using a method according to claim 1 (Reisman et al., col. 6, lines, 25-26 and 31-33).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reisman et al., 7,142,699 B2 as applied to claim 1 above, and further in view of Ort et al., 5,926,555.

Reisman et al. and Ort et al., both describe a fingerprint enhancement and identification system, however, Reisman et al. is silent on using smoothing filters for enhancement. Although, Ort et al. does use smoothing filters:

**Re claim 8**, a method as claimed in claim 1, characterized in that the pixels are adapted to the environment, as predominant at the time, of the given pixel by smoothing filters (Ort et al., col. 16, lines 57-63).

Art Unit: 2624

Therefor taking the combined teachings of Reisman et al. and Ort et al. as a whole, it is clear to one with ordinary skill in the art to use smoothing filters in finger enhancement and to modify Reisman et al. to include such filters.

Claim 14 is rejected under Reisman et al., however, Reisman et al. is silent on "further binarization" the examiner takes official notice that this method is notoriously well known and expected in the art and therefore would have been obvious to incorporate.

**Re claim 14**, a method as claimed in claim 12, characterized in that further binarization takes place after the filtering with Gabor filters adapted to direction. Examiner takes official notice that "further binarization" is common within the art.

***Allowable Subject Matter***

8. Claims 6, 7, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Re claim 6**, a method as claimed in claim 5, characterized in that the derivation of the variances is performed for tiles that overlap one another.



**Re claim 7**, a method as claimed in claim 6, characterized in that, at a resolution of approximately 500 dpi, the size of the tiles used for deriving the variance is 16.times.16 pixels, which tiles are each processed in steps of eight pixels.

**Re claim 11**, a method as claimed in claim 2, characterized in that tiles for which, when direction was determined, the response of one of the Gabor filters gave a recognizable direction, are filtered with a Gabor filter adapted to this direction, in that tiles for which, when direction was determined, the responses of the Gabor filters gave two adjoining recognizable directions, are filtered with a Gabor filter adapted to the mean direction, and in that tiles for which no direction was determined or for which, when direction was determined, the responses of the Gabor filters gave two non-adjacent directions, are not filtered.

***Examiner's Note***

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

Art Unit: 2624

However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vanchy Jr. whose telephone number is (571) 270-1193. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

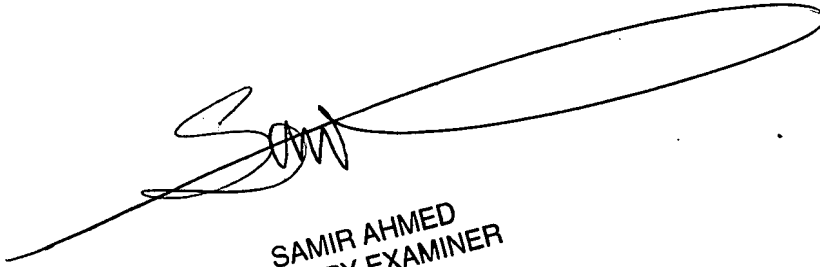
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/541,652

Art Unit: 2624

Page 10

Michael J. Vanchy Jr.  
Examiner  
AU 2624  
(571) 270-1193  
Michael.Vanchy@uspto.gov

A handwritten signature in black ink, appearing to be 'SAMIR AHMED', written over a horizontal line.

SAMIR AHMED  
PRIMARY EXAMINER